



Supply Chain Council Award for Supply Chain Operational Excellence

United States Army
Communications-Electronics Life Cycle Management Command (C-E LCMC)
Logistics and Readiness Center
Directorate for Readiness - Logistics Assistance Program

Supply chain innovations implemented and utilized by C-E LCMC Logistics Assistance Representatives (LARs) deployed to South West Asia in support of the Global War on Terrorism in Operation's Enduring and Iraqi Freedom.

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One Vision, One Mission – The Warfighter

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EXECUTIVE SUMMARY

The mission of the Communications-Electronics Life Cycle Management Command (C-E LCMC) is to acquire and sustain superior information technologies and integrated systems, enabling battle-space dominance for America's war fighters.

The mission of the C-E LCMC Logistics Assistance Program and its Logistics Assistance Representatives (LARs) is to provide technical assistance, in the form of hands-on troubleshooting, for tactical military units worldwide that possess sophisticated CE systems/equipment, assisting them in resolving unmanageable electronic maintenance and supply issues.

C-E LCMC LARs are in many critical instances, the tactical commander's only boots-on-the-ground source of diagnostic capability. They are the tactical commander's first line of defense when the logistics tail has not yet been established or is not properly functioning.

In support of Global War on Terrorism in Operation's Enduring and Iraqi Freedom all C-E LCMC LARs serve as crucial links in the extended supply chain process through their direct involvement in the planning, delivery, and return of critical repair parts needed to sustain C-E systems/equipment. This especially holds true for many of the low-density highly sophisticated CE systems/equipment utilized by forward deployed tactical military units and supported by the C-E LCMC.

In summary, C-E LCMC's primary goal, mission, and objective are to provide quality equipment and sustainment support to the Warfighter. C-E LCMC LARs are key contributors and participants in sustaining a high readiness posture in the United States Army. It is for this effort that C-E LCMC Directorate for Readiness' Logistics Assistance Division submits this award package.

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SECTION 1: GENERAL INFORMATION AND PROJECT COMPLEXITY (15 POINTS)

1.1. Name Of The Submitting Organization (Corporation, Service, Etc).

Communications-Electronics Life Cycle Management Command (C-E LCMC)

1.2. Responding Organizational Unit (Site, Function, Etc.).

C-E LCMC, Logistics Readiness Center, Directorate for Readiness, Logistics Assistance Division.

1.3. Brief Mission Description Of The Overall Business Objectives, Product Lines, And Mission Of The Organization.

The mission of the C-E LCMC is to acquire and sustain superior information technologies and integrated systems, enabling battle-space dominance for America's Warfighters. The primary mission of the Logistics Assistance Program and its Logistics Assistance Representatives (LARs) is to provide technical assistance, in the form of hands-on troubleshooting, for tactical military units worldwide that possess sophisticated CE systems/equipment, assisting them in resolving unmanageable electronic maintenance and supply issues.

1.4. Award Category of Submission (Operations, Academic, Technology).

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1.5. Brief Description Of The Proposed Supply Chain And The Processes The Submission Spans (Plan, Source, Make, Deliver, Return, Etc). – 15 Pts

Defined as a linked set of resources and processes the Supply Chain begins with the sourcing of raw material and extends through the delivery of end items to the final customer. While the federal supply system is fairly efficient during peacetime it falls short of the mark with regard to timely delivery/return of critical repair parts to/from the final customer when tactical military units are deployed to remote locations such as Iraq and Afghanistan. This especially holds true for many of the low-density highly sophisticated CE systems/equipment utilized by forward deployed tactical military units and supported by the C-E LCMC. C-E LCMC LARs being part of the solution, serve as crucial links in the extended supply chain process through their direct involvement in the planning, delivery, and return of critical repair parts needed to sustain CE systems/equipment.

1.6. Names Of The Supply Chain Partner Organizations (External) Involved In The Project. (Includes The Number Of People Involved From Each Partner Organization And The Functional Category Of Each.)

External Supply Chain Partners	# Of People	Functional Category
Product Manager FIREFINDER	11	Program Management
Northrop Grumman	7	Manufacturing
Raytheon	4	Manufacturing

DLA	5	Supply Operations
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1.7. Names Of The Functional Organizations (Internal) Involved In The Project. (Includes The Number Of People Involved From Each Functional Organization And The Functional Category Of Each.)

Internal Supply Chain Partners	# Of People	Functional Category
IEW&S	6	Weapons Systems Management
Directorate for Readiness	22	Technical & Logistical Support
Tobyhanna Army Depot	6	Supply & Technical Support

1.8. Provide A POC For Each Supply Chain Partner (Name, Mailing Address, Commercial Telephone Number, DSN, And E-Mail Address).

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SECTION 2: IMPLEMENTATION (75 POINTS)

2.1. Explain Why The Supply Chain Initiative Was Undertaken And How It Was Selected - (10 Points).

The C-E LCMC Logistics Assistance Program maintains a highly skilled technical LAR workforce trained in several different technology categories (i.e., Information Technology; Ground Communications; Switching and Transmission systems; Avionics; Fire Control and Sensors; and Power Generation and Environmental Equipment).

In support of Global War on Terrorism in Operation's Enduring and Iraqi Freedom all C-E LCMC LARs serve as crucial links in the extended supply chain process through their direct involvement in the planning, delivery, and return of critical repair parts needed to sustain CE systems/equipment. This especially holds true for many of the low-density highly sophisticated CE systems/equipment utilized by forward deployed tactical military units and supported by the C-E LCMC.

To serve as an example of C-E LCMC LAR involvement in the extended supply chain process this submission will focus on only one of the technical categories employed by the C-E LCMC Logistics Assistance Program, the Fire Control LAR.

Two of the systems that a Fire Control LAR supports are the AN/TPQ-36 Mortar Locating and AN/TPQ-37 Artillery Locating radars, referred to as FIREFINDER. These radars are critical Force Protection systems, which are utilized to "backtrack to origin" incoming mortar, artillery, and rocket fired by enemy forces. When an attack takes place FIREFINDER data is digitally passed within seconds to Field Artillery units allowing them to quickly return fire with pinpoint accuracy thus reducing/eliminating the threat to friendly forces.

Due to FIREFINDER's critical Force Protection role the Theater Commander directed that this system be operationally ready 100% of the time. Note: The standard is 90% Operational Readiness. Tactical military units utilizing this system called upon C-E LCMC Fire Control LARs to assist them in determining the best method for achieving/maintaining a 100% Operational Readiness rate.

Understanding the sense of urgency; magnitude of the effort; and existing limitations of the federal supply system for quick delivery of critical spare parts to Iraq and Afghanistan C-E LCMC Fire Control LARs recommended each unit conduct a 100% inventory of all essential repair parts to determine zero balance lines; assisted units with submitting funded requisitions to fill zero balances; and recommended establishing an in-theater centrally controlled forward stockage of critical spares. Fire Control LARs were then utilized to validate system failures, courier repair part(s) forward to radar sites, assist in repair, and then return defective part(s) to the in-theater forward stockage point.

2.2. Indicate the duration of the project. Note if the project was a pilot that is being rolled out. Note if the project is ongoing or still in development. – (5 Points).

Being a part of the solution, serving as crucial links in the extended supply chain process is just one of many daily responsibilities of a C-E LCMC LAR. They were with the first units that deployed into Afghanistan after September 11, 2001 just as they were with the first units that left Kuwait and headed into Iraq in 2003. C-E LCMC LARs have served with deployed units

involved in Operations in Kuwait, Saudi Arabia, Haiti, Somalia, Bosnia, Kosovo and as far back as Vietnam.

Related to the FIREFINDER example it was in September 2003 when the Theater Commander directed that this system be operationally ready 100% of the time. These initiatives will continue until the Federal Supply System obtains the long-lead repair parts and is able to establish a strong supply chain; the logistics delivery process improves to an acceptable level of performance; or hostilities cease.

2.3. Describe, In Detail, the Process Used to Complete the Initiative. – (15 Points)

The process used to determine the best approach encompassed the following steps:

1. Inventory of all the units Essential Repair Parts to determine number of zero balance lines. C-E LCMC Fire Control LARs and Unit Radar Technicians accomplished the inventory.
2. Funded requisitions for all FIREFINDER repair parts at zero balance were submitted through the Standard Army Retail Supply System. Fire Control LARs provided C-E LCMC Weapon System Team Item Managers with the requisitioned parts National Stock Numbers so stock availability could be determined.
3. Fire Control LARs working in concert with Product Manager FIREFINDER and the C-E LCMC Weapon Systems Team Item Managers determined which repair parts were replaced more frequently in each system. Using this data, in conjunction with zero balance listing from each unit, Fire Control LARs were able to develop a “Push Package” to be sent into theater and centrally controlled as forward stockage items.
4. The C-E LCMC Weapon Systems Team analyzed critical repair parts shortages and developed a get-well plan.
5. Logistics Support Activity Anaconda in Balad, Iraq was selected as the best central location for the Push Package. Tobyhanna Army Depot established a FIREFINDER Forward Repair Activity at that location which served as the inventory control point. All parts were to be issued and returned through the FIREFINDER Forward Repair Activity.
6. Fire Control LARs were then utilized to validate system failures, courier repair part(s) forward to radar sites, assist in repair, and then return defective part(s) to the in-theater forward stockage point.
7. At remote radar sites units contacted the Fire Control LAR using a Tele-Maintenance capability. A Tele-Maintenance suite consists of a satellite phone, laptop and two-way conferencing software to assist in troubleshooting and identifying the failure of the system.
8. Transportation of the FIREFINDER parts to remote locations was a major problem due to the hostile environment. Improvements were necessary in order to achieve the mandated readiness rates. Changes made were:
 - a. Direct shipment of critical repair parts to Kuwait, Baghdad, and Balad airports/airfields. Fire Control LARs picked up parts from these airports/airfields for onward shipment to the unit.
 - b. Parts were delivered via armed convoys, scheduled dedicated helicopter flights (CH-47, Blackhawk, or Apache), and/or C-130 or Sherpa flights to other airfields which Fire Control LARs met them and hand carried the part to the units/radar repairman then assisted the unit in returning the system to a Full Mission Capable status.

9. Realignment of Army Radar Sections left many units without Direct Support Tools and Test, Measurement, Diagnostic Equipment. Fire Control LARs were provided with tools and test equipment to expedite the troubleshooting process and more accurately determine parts requirements.

2.4. Identify Significant Challenges Encountered, the Process for Resolution, and the Solutions. Identify any Best Practices Employed or Developed – (10 Points).

Initially the challenge was determining the extent of zero balances within deployed units. These units were not restocking as they used spare parts. This, in turn, limited demand data at the National level therefore reducing the ability to maintain adequate stocks against impending demands. Fire Control LARs working in conjunction with non-deployed radar units located as many of the zero balance items as were available and coordinated with the C-E LCMC Weapon System Team Item Managers to get them incorporated into the Push Package and shipped to Iraq. Fire Control LARs worked with the C-E LCMC Weapon System Team Item Managers in determining required stockage level based on surge requirements from deployed units.

2.5. Indicate the Metrics Used to Measure Progress and Success – (5 Points).

- Detailed status reports of deployed FIREFINDERS submitted at 1200 and 2400 hours daily to C-E LCMC Emergency Operations Center and subsequently briefed to Senior Staff.
- Operational Readiness rates for deployed FIREFINDERS computed daily.

2.6. Document and Quantify Cost and Performance Benefits, Including the Projects Return on Investment and Changes in the Value of One or More of the SCOR Level 1 Metrics (not all metrics must be captured or reported) – (15 Points)

- **Supply Chain Delivery Reliability:** Weapon System Team Item Managers was made aware of stockage level requirements and ensured FIREFINDER repair parts were stocked in the retail supply system to a more valid criterion. Forward placement of FIREFINDER repair parts Push Package shortens delivery times by 10-15 days. Parts shipment into South West Asia reduced to less than five days
- **Supply Chain Responsiveness:** Actions taken to date have resulted in a much higher Operational Readiness posture for FIREFINDER, resulting in saving lives.
- **Supply Chain Flexibility:** Extending the Supply Chain Forward minimized downtime. The Tobyhanna Army Depot FIREFINDER Forward Repair Activity became a One-Stop Supply Shop for the units enabling faster delivery of repairs parts and turn in of defective parts.
- **Supply Chain Asset Management Efficiency:** Defective parts were inducted into the maintenance cycle faster. This reduced the overall requirement to purchase new parts. Transfer of knowledge between Fire Control LARs and unit maintenance personnel resulted in enhanced troubleshooting skills, which decreased demands on FIREFINDER repair parts.

2.7. Outline How the Success of this Effort Supports the Organizational Objectives Described in Section 1, Item 3 – (15 Points).

FIREFINDER units have been able to achieved 100% Operational Readiness for short durations with the rate normally remained a few points above 90%. Deployed C-E LCMC Fire Control LARs will continue to provide immediate response to this urgent requirement.

SECTION 3. KNOWLEDGE TRANSFER (10 POINTS)

3.1. Describe the efforts to share lessons learned from this effort with other internal organizations - (5 Points)

Lessons Learned are routinely captured, analyzed and shared throughout the C-E LCMC community. Other Low-Density Critical Weapon Systems have adopted forward stockage of critical spare parts in theater to reduce downtime and all C-E LCMC LARs are actively engaged with deployed tactical units in an effort to keep their systems “on-the-air”.

3.2. Explain how this initiative can be transferred to other organizations, and specify the likely candidates for transference - (5 Points)

The concept of forward stockage of spares along with intensive management of maintenance and supply actions required to maintain an acceptable level of performance is directly applicable to other government services as well as private industry.